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MAXIMIZING TACTICAL FIGHTER AIRCREW EXPERIENCE IN COMBAT READY --ETC(U)
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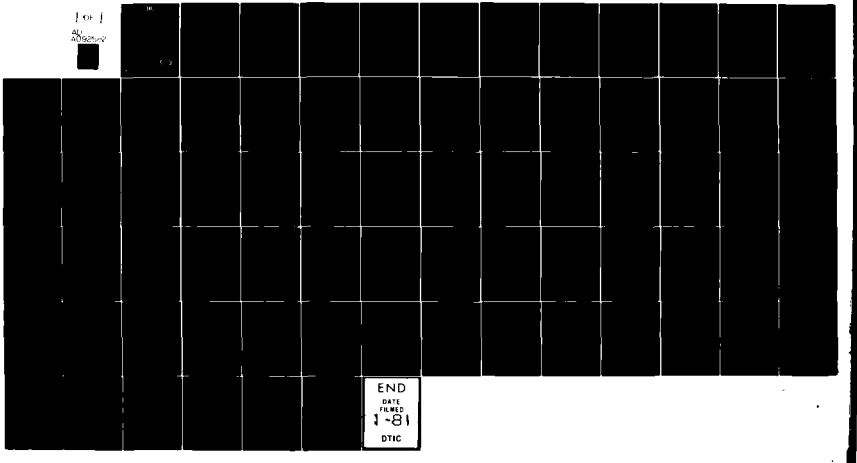

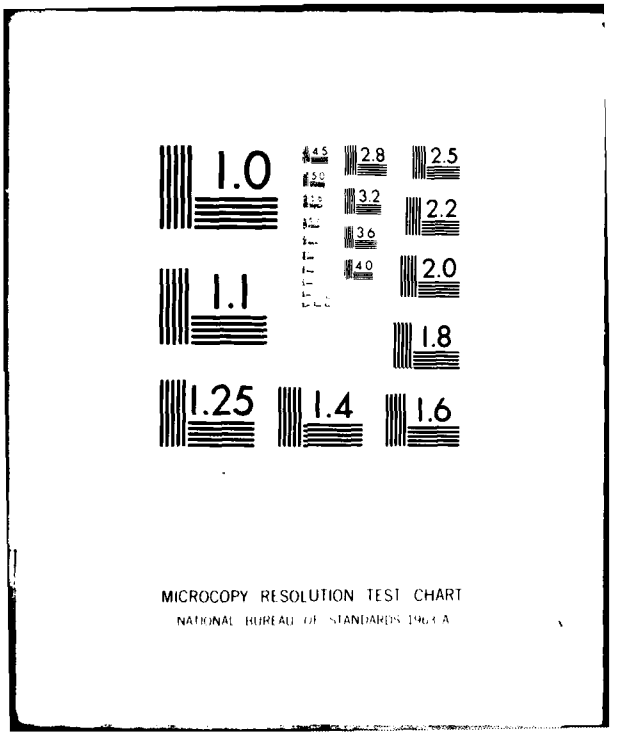
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MAXIMIZING TACTICAL FIGHTER AIRCREW EXPERIENCE IN COMBAT READY UNITS

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

JOHN W. HAWLEY, Maj, USAF
B.S., University of Wyoming, 1969
M.A., University of Northern Colorado, 1976

Fort Leavenworth, Kansas
1980

Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A093 582	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Maximizing Tactical Fighter Aircrew Experience in Combat Ready Units		5. TYPE OF REPORT & PERIOD COVERED 6 June 80
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Hawley, John W., Major, USAF		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Student at the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Command and General Staff College ATTN; ATZLSW-DC-MS		12. REPORT DATE 6 June 80
		13. NUMBER OF PAGES 66
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES
Master of Military Art and Science (MMAS) thesis prepared at CGSC in partial fulfillment of the Masters Program requirements, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Fighter Aircraft	Air Force Training	Flight Crews
Flight Training	Combat Readiness	Aerial Warfare
Force Management	Operational Effectiveness	
Fighter Aircrew Training	Pilot Effectiveness	Pilot Training
Aircrew Experience	Personnel Management	Jet Fighters

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

See Reverse

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Unclassified
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

This study investigates the problem of how the United States Air Force can simultaneously maximize aircrew flying experience in combat ready fighter units, provide sufficient tactical expertise on the staff, and sustain viable aircrew replacement training programs. It analyzes whether or not there is a serious lack of fighter experience among pilots in combat units. The value of the experienced pilot in combat situations is discussed and some fighter force management changes are recommended.

The general conclusion of this study is that fighter force management policies and procedures should be revised so that the maximum number of experienced pilots will be available to fight what is likely to be an intense, "come as you are" war. Recommended force management changes include assigning the bulk of the aircrew replacement training mission to Air Reserve forces, decentralization of some aircrew training programs, and the decentralization of several staff functions.

Maximizing Tactical Fighter Aircrew Experience in Combat Ready Units

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6 June 1980

A Master of Military Art and Science thesis presented to the faculty of the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027

MASTER OF MILITARY ART AND SCIENCE

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Title of thesis Maximizing Tactical Fighter Aircrew Experience in Combat Ready Units

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Accepted this 11th day of June 1980 by Philip J. Brookes, Director, Master of Military Art and Science.

The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

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ABSTRACT

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INTRODUCTION

Military forces should be structured and managed in a manner which will allow for effective and timely employment. A military capability that cannot be brought to bear against the opposition in a timely manner is of no real value. Therefore, force management must be changed periodically as new threats evolve and the nature of armed conflict changes. General Fred C. Weyand, United States Army, believes the nature of armed conflict is changing. He says,

> "Modern weapons have such great lethality that future conflicts can be devastatingly swift and deadly, with the weak and unprepared having little chance of surviving such ominous attacks. In the past, the winner could be the side which emerged victorious from a war's final campaign; however, future war might very well be determined by the outcome of the initial battles. The loser of the opening engagements may find victory in the war beyond his grasp."[1]

Military planners are saying also that warning time is decreasing as modern technology is developing.[2] In fact, many high ranking military officers think the next conflict may well be a "come as you are" war; it may last only a few days or weeks. If one accepts this premise, then it only makes sense that a force

should be structured with its best men and equipment in the front line units.

The United States Air Force has good equipment in its combat ready tactical units; in fact, it has some of the best equipment in the world. Force modernization programs are continuing at a rapid pace with the introduction of the F-15, A-10, and soon the F-16 into front line fighter units. The U.S. Tactical Air Force, without a doubt, has good equipment ready for timely employment.

There is some question, however, about the quality of the man in the front line units....and, don't forget, the man is very important. Baron Manfred Von Richthofen said,

> "Victory in the air belongs to him who is calmest, who shoots the best, and who has the cleverest brain in a moment of danger."

Indeed, pilot ability was important in Von Richthofen's era. It may be even more important today. It takes an excellent pilot to maximize the performance of a modern jet fighter. What, then, is the problem with the quality of USAF fighter pilots? Unfortunately, the Air Force is having difficulty retaining highly-trained, experienced pilots.[3] As a result, flying experience in the combat ready fighter units has been declining in recent years. Projections for improvement in the situation are very bleak. So bleak, in fact, General Allen, U.S. Air Force Chief of Staff, recently

told the House Armed Services Committee that solving the "people problem" was his "single greatest concern."[4]

Even if the leadership of the Air Force (with the help of Congress) is able to solve the pilot retention problem, there is still going to be a shortage of experienced fighter pilots for some time. Most of the pilots that have separated from the Air Force had between six and eleven years of service.[5] It will take several years to replace that experience. Meanwhile, the USAF must remain ready to fight the intense, "come as you are" war; it will have to do that with fewer experienced fighter pilots than desired.

If a resource is in short supply, then priorities should be established for its use. As explained above, experienced fighter pilots are in short supply in the USAF. Consequently, the Air Force is faced with the challenge of determining where they are needed most. Currently, most experienced fighter pilots are used for three types of duty. They are: (1) assigned to combat ready units, (2) instructor pilots for replacement aircrews, and (3) staff officers at various headquarters. Fundamental to determining how much priority should be placed on assigning experienced pilots to the combat ready units is the issue of the value of experience in combat. If it is found to be important to have experienced pilots on the front lines, then the combat ready units, it seems, should get

priority over the other requirements. On the other hand, it takes good instructors to sustain a viable aircrew replacement training program. Rated expertise on the staff is also important so decisionmakers will make good decisions. In other words, prioritizing where to use experienced fighter pilots is a difficult and complex task. The following research project was undertaken to help solve the experienced pilot prioritization problem.

STATEMENT OF THE PROBLEM

How can the USAF simultaneously maximize aircrew experience in combat ready fighter units, provide sufficient tactical expertise on the staff, and sustain viable aircrew replacement training programs?

PURPOSE OF THE STUDY

This study will determine if there is a serious lack of fighter experience among pilots in the combat ready units. It will search for answers to the question of whether or not experienced pilots are critical to success in combat. If it is found that experience is important and there is a serious lack of it on the front lines, force management changes will be recommended to solve the problem. More specifically, research was conducted to answer these questions: (1) How important are experienced fighter pilots to

combat effectiveness? (2) How serious is the lack of flying experience? (3) Where are all the experienced fighter pilots if they aren't in the front line units? (4) Is there a way to get more experienced fighter pilots assigned to combat ready units so they will be available to fight the short notice, short duration war?, and (5) Are there currently any initiatives being studied by staff personnel to solve the problem?

ASSUMPTIONS AND LIMITATIONS

It is assumed that (1) preparations should be made to fight the "worst case" scenario, i.e. the short notice, short duration war. (2) Energy shortages and budget constraints will continue into the future; thus, flying hours per pilot will not increase significantly above current levels, and (3) that pilot retention will continue to be a problem for the USAF.

The scope of this research was limited to highlighting the problem and offering possible solutions. Only pilot manning problems were studied since three (F-15, F-16, and A-10) of the five major fighter weapon systems (F-15, F-16, A-10, F-4, and F-111) are manned only with pilots. Any proposed solution to the problem will likely require major changes in fighter force management. The decisions necessary to make such changes will have to come from the highest levels in the Air Force; it should be recognized that

further staffing and research will be required prior to implementation of any major change.

DESIGN AND ORGANIZATION

A thorough review of the literature was accomplished to determine, (1) if this problem or any related problems had been studied previously by other researchers, (2) what historical basis exists for having highly experienced fighter pilots assigned to front line units, and (3) whether or not the USAF has studied or is studying the problem. Staff officers at various levels throughout the Air Force were interviewed by telephone to quantify the seriousness of the lack of experience problem and to determine impacts of possible solutions. Group discussions with several other experienced fighter pilots were held in an effort to assess the gravity of the situation and the impacts of the solutions that will be offered. These pilots were all experienced, field grade officers, and collectively they had experience with the F-4, F-15, F-111, and A-7 weapon systems.

Chapter Two presents a review of related research, and examines the value of the experienced fighter pilot. Chapter Three quantifies the severity of today's fighter manning problems, while Chapter Four poses the major constraints on fighter force management. The fifth chapter recommends solutions

to the problem and analyzes the feasibility of those solutions. Chapter Six summarizes, concludes and recommends actions to improve experience levels in USAF front line units.

DEFINITION OF TERMS

Tactical Fighter Squadron (TFS) -- For the purposes of this paper will be defined as a unit equipped with fighter aircraft which has a primary commitment to go to war within a matter of hours.

Tactical Fighter Training Squadron (TFTS) -- Defined as a unit equipped with fighter aircraft which has a primary mission of conducting formal aircrew training courses and does not have a commitment to go to war.

Replacement Training Unit (RTU) -- A TFS which has a mission of conducting formal aircrew training courses and at the same time has a commitment to be ready to go to war in a matter of several days.

Formal Course Instructor Pilot -- A pilot who has attended a Central Instructor School and is then and only then qualified to instruct in a formal aircrew training course.

Squadron Instructor Pilot -- A pilot who normally has not attended a Central Instructor School and is qualified to instruct only in informal squadron training programs.

Other acronyms and technical terms will be explained at their point of use.

CHAPTER ONE

End Notes

1. General Fred C. Weyand, United States Army, "The First Battle is Crucial," Army, 16 (October 1975), p. 16.

2. Stated by three different General officers in non-attribution lectures to the 1979-80 Class of the United States Army Command and General Staff College.

3. Of 100 pilots entering their sixth year of total active federal commissioned service, 74 will leave the rated force by the end of the eleventh year. This data was based on September 1979 loss rates. Captain Ballard, Air Force Manpower and Personnel Center, Randolph AFB, Texas, MPCRORS, (talking paper), October 1979.

4. General Lew Allen, United States Air Force Chief of Staff, Air Force Times, Volume 40, Number 38 (April 14, 1980), p. 19, as quoted by Ira C. Eaker in "Viewpoint."

5. Captain Ballard, Air Force Manpower and Personnel Center, Randolph AFB, Texas, MPCRORS, (talking paper), October 1979.

CHAPTER TWO

REVIEW OF RELATED RESEARCH

As stated in Chapter One, changes may be required in fighter force management in order to maximize fighter aircrew experience in the combat ready units, and these changes are going to require decisions at the highest levels within the United States Air Force. Fundamental to making these decisions is the question of how important are experienced pilots in a combat situation? It's easy to say there is no substitute for experience when the going gets tough, but in the fighter business, it is very difficult to prove. It is difficult because there is not a good way to evaluate objectively fighter pilot performance. Consequently, one normally turns to such things as accident rates, bomb scores, historical combat success rates, etc. A review of the literature indicates that other than these indicators, little is known about the value of the experienced fighter pilot in combat.

THE VALUE OF EXPERIENCE IN COMBAT: A HISTORICAL BASIS

Lieutenant Colonel Claude C. Blanch in an Air War College research study titled "Air Superiority

Today and Tomorrow," has summarized many historical facts which indicate that experienced fighter pilots have accounted for most of the enemy aircraft kills achieved by U.S. air forces in previous conflicts. His facts are well documented and are referenced to primary sources. Following is a summary of the evidence Lieutenant Colonel Blanch uses to show that it is the quality of the pilot that determines who is the victor in air to air combat.[1]

- "forty percent of all aircraft downed in WWII were destroyed by four percent of the pilots." p. 45
- "In Korea, USAF pilots flying the F-86 shot down 792 superior performing MIG-15s while losing 78 American aircraft." p. 45
- "Thirty-eight USAF pilots became jet aces in Korea. Collectively they averaged more than 2,000 hours flying time in fighters and had 80 combat missions in WWII with an average of two victories each. Thirty-four of the 38 had had WWII experience. These few pilots destroyed over 310 MIGs, nearly one-half of all that were shot down in the Korean War." p. 45
- A 1955 study by the University of Chicago of the Korean conflict concluded that relatively few pilots consistently converted engagements into firing positions. It stated pilot aggressiveness, the amount of jet flying, and time in the type aircraft were identified as strong factors in influencing combat effectiveness. p. 46
- In reference to pilot performance in the Vietnam War, Blanch states, "the Red Baron studies showed that prior to June 1966, over 50 percent of fighter pilots in combat had more than 2000 total flying hours. They averaged 510 hours in the aircraft flown in combat, and the MIG kill ratio was 3 to 1 in favor of the USAF. An Air Staff study

showed 12 or 13 MIG kills early in the Vietnam War were achieved by pilots who averaged 2,200 hours experience in fighter aircraft. By June 1968, the average time in the combat aircraft was only 240 hours and the MIG kill ratio had dropped to .85 to 1. At this time less than 30 percent of the fighter pilots in combat had had previous tactical fighter experience." p. 48

Note - It will be shown in Chapter Three that the experience in front line units today does not even approach some of the experience levels mentioned above.

HOW MUCH EXPERIENCE IS ENOUGH?

As shown, there is a historical basis for wanting the experienced fighter pilots in the war, but just how much experience does it take to reach a reliable level of combat performance? A 1971 RAND study reported that, "fighter flying proficiency is a long developmental process taking five or more years of concentrated work to reach reliable levels of combat performance."[2] Fighter pilots have been averaging between 200-300 hours of flying time per year over the last few years, so five years of experience usually equates to 1000 to 1500 flying hours. It will be shown in Chapter Three that only a very small percentage of pilots in combat ready fighter units have even 1000 hours of fighter experience. Remember, one thousand hours is only one-half of the experience the average ace had in Korea.

Whether it takes five, six, seven or even eight years for a fighter pilot to become combat reliable may be rather academic. If more flying experience can be made available to fight the next battle, force quality would be enhanced. The higher the experience level, the greater is the chance that the fighter force will be successful in combat. A speaker at Air War College in 1976 expressed this in the following formula:

"EQUIPMENT + TRAINING + TACTICS = EFFICIENCY IN COMBAT"[3]

Experienced pilots have more training and are better schooled in tactics; therefore it follows that efficiency in combat will improve.

THE EQUIPMENT - TRAINING GAP CONCEPT

The "Equipment - Training Gap" as presented in figure 2.1 is another interesting concept which graphically represents the value of experience.[4] Notice in figure 2.1 that the pilot capability line rises rapidly at the beginning and then tends to level off as the amount of training or experience increases. The actual shape of this curve is not known and could be a subject of much debate, but the point to be made is that as pilot experience increases, there is less of a "gap" between the inherent capability of the aircraft and the acquired capability of the pilot. Considering pilot age factors, the curve might look as

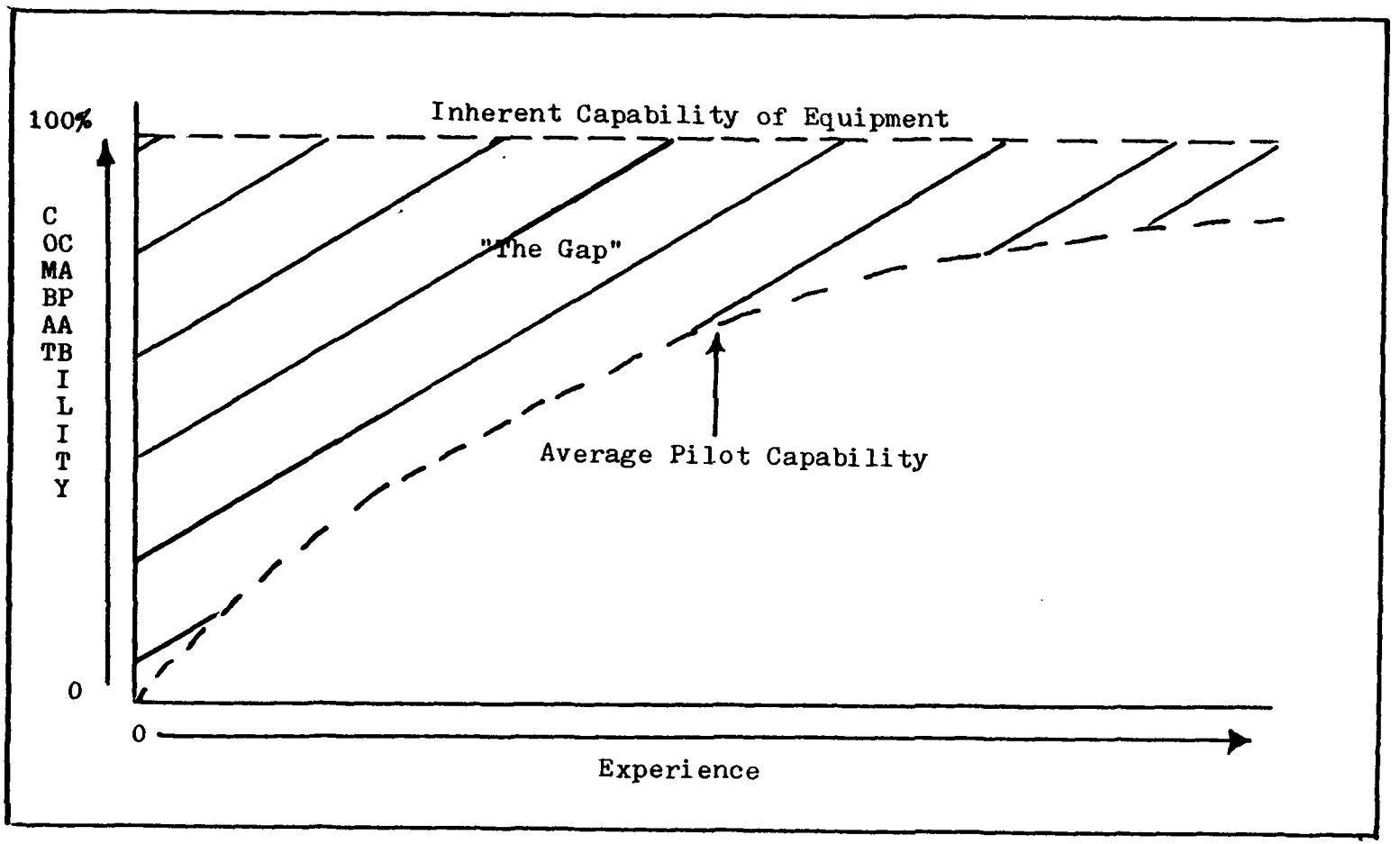


Figure 2.1 Model of Equipment - Training Gap

shown in Figure 2.2 when extended out to the point where the pilot retires. Note the slope remains positive until a pilot reaches approximately 40 years of age at which time pilot capabilities begin to decline due to age.

Most pilots agree that it takes a great deal of experience to be able to maximize the performance of a modern fighter aircraft. These aircraft are designed to perform a variety of missions, and it takes years to train a pilot to a level of proficiency in several different mission types to guarantee the survivability of the weapon system and the accomplishment of a demanding mission. No one is ever the master of his trade in the fighter business. There are always situations which arise that challenge even the best. The modern battlefield will be no exception.

The frightening part of the situation the U.S. Air Force is now faced with is that it has spent a great deal of time comparing friendly weapon systems against enemy weapon systems, but that comparison is totally misleading if there is in fact, an "Equipment-Training Gap." Fighter pilots of other countries and yes, even other services are amused at the amount of time the USAF pilot spends dwelling on relative capabilities of opposing aircraft, because time and again battles have been won by the man...not the machine. It's as Air Force Chief of Staff, General Lew Allen,

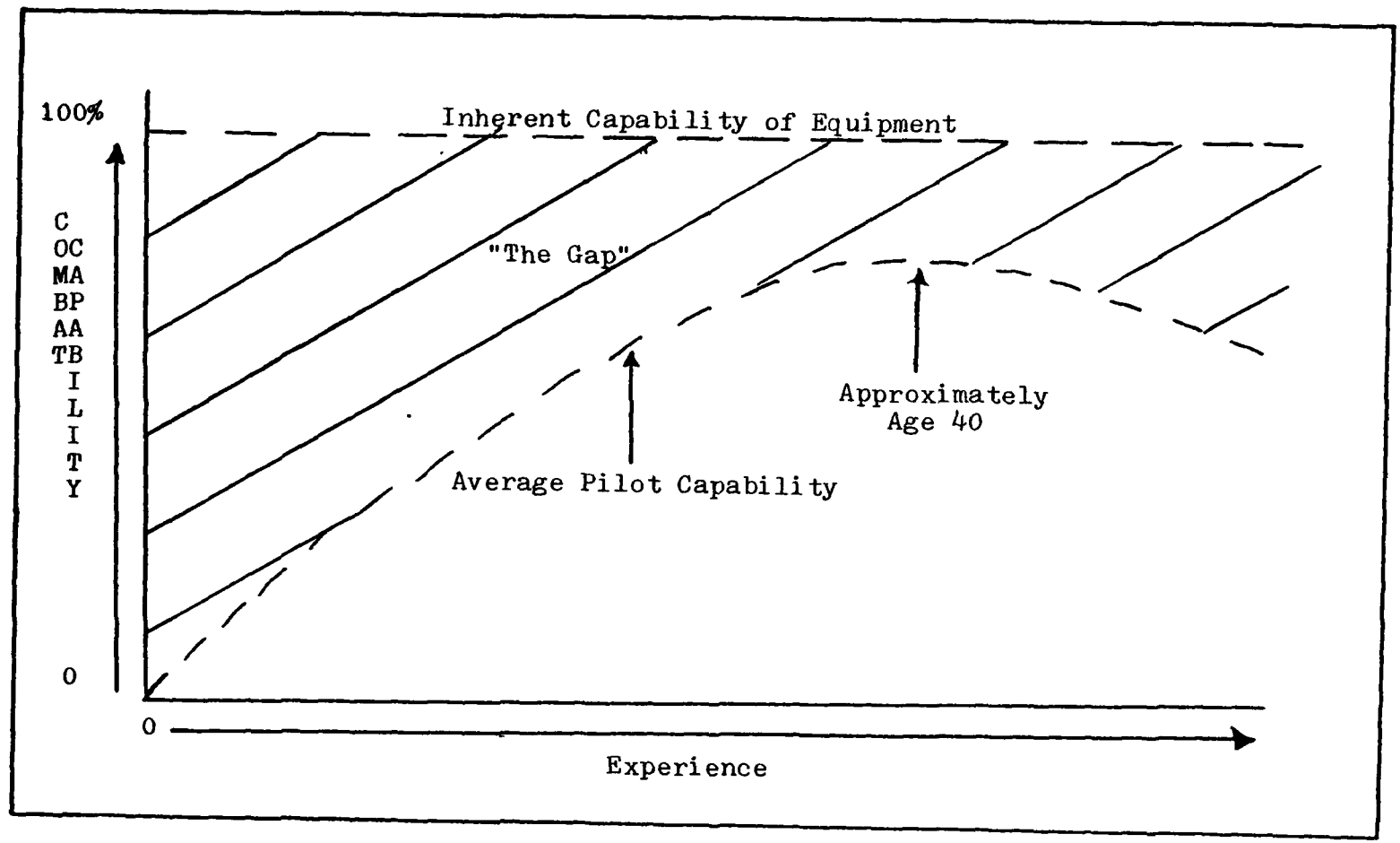


Figure 2.2 Model of Equipment - Training Gap (extended)

said, "Ultimately our capability rests not on weapons but on people."[5]

THE PILOT TASK AND PROFICIENCY

W. Prophet of the Human Resources Research Organization, did an extensive review of the literature in studying the retention of flying skills for the USAF and concluded the following:

> "It is clear that the tasks the pilot of modern military aircraft must perform are many and complex. There are few task situations that demand as much of the performer in terms of physical strength and endurance, fine perceptual and motor discriminations, cognitive functioning, verbal communication skills, decision making, and the like, as does that of flying an aircraft."[6]

The pilot task is complex, indeed. Volumes have been written on the "pilot task" as the result of much research which has been conducted by various organizations under Air Force contract for the purpose of trying to find a better way to select and train pilots. Progress has been made in this area, but W. Prophet, after he reviewed the literature, says, "....that little research has been done on the nature, development, maintenance, and retraining of the higher level flight skills characteristic of the professional USAF pilot."[7] It is these higher level skills that make a fighter pilot effective in combat, yet ironically, little is known about them. Only the basic tasks of piloting an aircraft are thoroughly understood.

A pilot who possesses "higher level skills" as described by Prophet, would normally be an experienced pilot. He would have to have a great depth of knowledge about tactics, know all there is to know about his weapon system, and be able to physically fly his aircraft to its maximum performance. This individual would have mental discipline and is capable of thinking well ahead of his aircraft. This author maintains it takes continuous, intense training to keep a pilot proficient at the higher level skills.

An issue discussed much among fighter pilots is whether or not a pilot that has spent 3-5 years out of the cockpit in staff duty can ever reacquire the higher level skills. Informal discussions with instructor pilots indicate that most feel after 3-5 years of non-flying, many pilots never "get it all back together." Certainly there are some exceptions. Resolving the issue of whether or not pilots can reacquire not only basic skills, but higher level skills as well, after non-cockpit duty is fundamental to the determination of how the fighter force should be managed. If they never reacquire the "higher level" skills, maybe they should not be allowed to leave the cockpit.

Another fundamental question is who are the best pilots? Are they the pilots with 1000 flying hours and five or six years of continuous cockpit experience or are they the ones with 2000 hours who have just returned to the cockpit after having not

flown for five years? Which group has the higher level skills? What is the value of experience now? Is the 2000 hour pilot better than the 1000 hour pilot? The U.S. Air Force needs an answer to that question. Much research has been accomplished on the retention of flying skills, but this researcher notes that primarily relatively short non-flying periods (two or three years) were studied and then the only concern was how long it took to get the pilot basically requalified in the aircraft. No studies were found that attempted to address how really effective a pilot was going to be in combat after say a five year interruption in cockpit duties. Five years of non-flying is not an unrealistic time frame to consider since most intermediate service schools are one year in length and a subsequent assignment to a four year staff tour means the pilot will not fly for five years. Will this pilot ever reacquire the "higher level" skills again, thereby reaching a high level of combat reliability, or has the value of his experience been degraded? Do the benefits of that rated presence on the staff outweigh the costs in combat capability in the unit? Is there a better way to manage the fighter force? Some answers to these questions will be offered in Chapter Five.

THE MCDONNELL DOUGLAS STUDY

McDonnell Douglas Corporation conducted a major study of fighter pilot effectiveness under the sponsorship of the Defense Advanced Research Projects Agency. In their April 29, 1977, final report they had this to say:

> "'Any fighter pilot' can tell you how to improve air-to-air combat effectiveness - find a good way to select a man for air-to-air, give him specialized training, and keep him in the cockpit. The Israelis do it this way and claim a 60 to 1 kill ratio. The kill ratio of the U.S. Air Force in Southeast Asia was about 2.5 to 1. We believe that it would be prudent to very seriously consider the changes the fighter pilots recommend."[8]

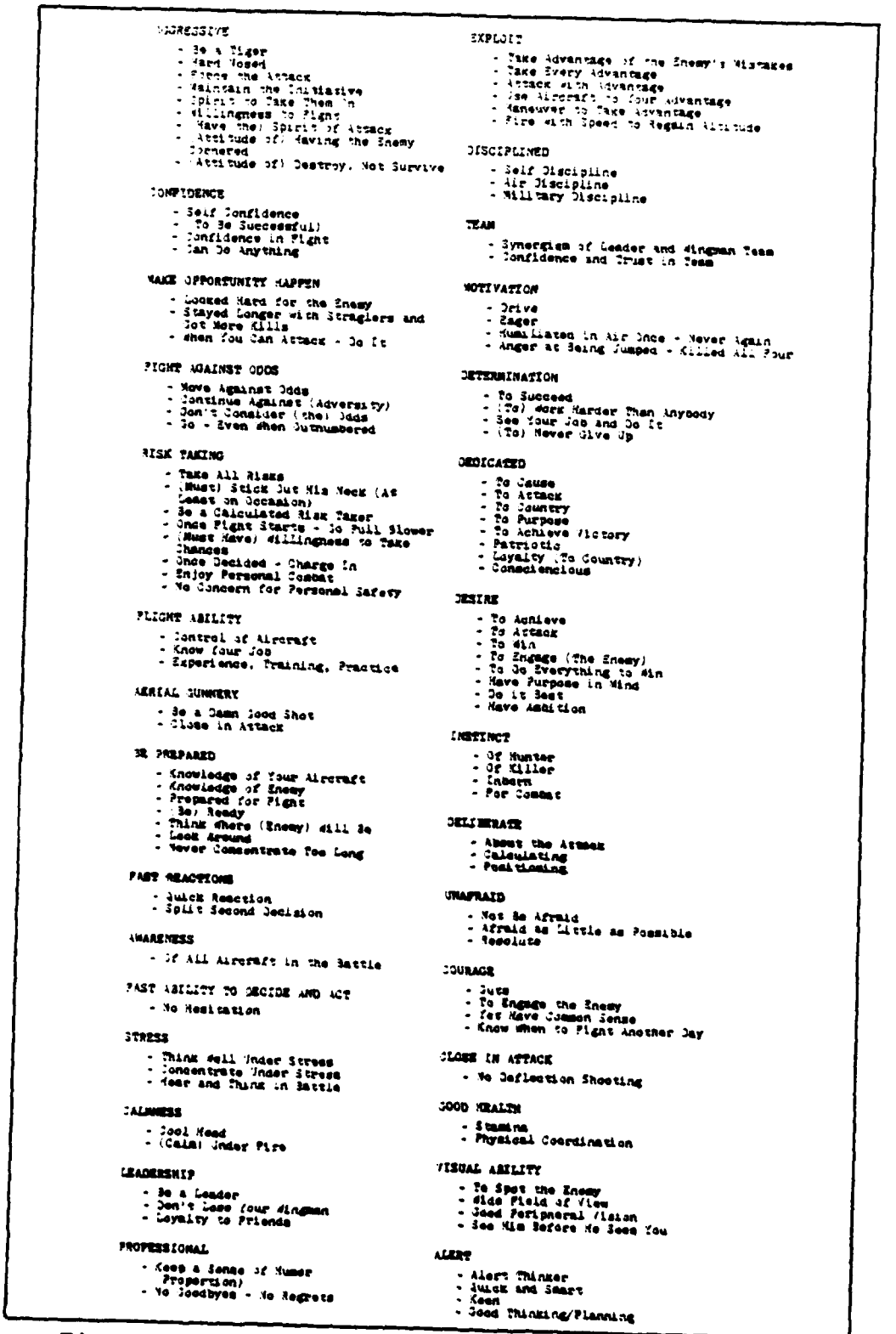
Note - It has been three years since this report. Few changes have been made in the selection and training of the USAF fighter pilot.

The bulk of this McDonnell Douglas research project was devoted to finding a better way to select air-to-air fighter pilots, but it offers some insight into the value of flying experience if one can "read between the lines." McDonnell Douglas had 373 fighter pilots respond to a survey which asked what it takes to be a successful fighter pilot. Two hundred and eighty of the three hundred and seventy three pilots that responded were ace aviators or had MIG kills in Southeast Asia. From the survey responses the researchers compiled a list of the characteristics and attributes of

the Combat Effective Fighter Pilot. (See figure 2.3)[9] Several of the attributes listed are personality traits, but many of them are skills that must be acquired through training. It could be argued that even some of the personality traits are a function of training. For example, aggressiveness in an aerial engagement can be trained. Confidence is a function of adequate training. Courage often times comes from having been in similar situations many times before. It is interesting to note, however, that few researchers ever "go out on a limb" to say exactly how much training it takes to develop the desirable characteristics and attributes of a combat effective fighter pilot. True, some pilots can be trained in less time than others, but the question remains - How much training does it take to make the <u>average</u> fighter pilot combat effective? How much experience must he have to possess the desirable attributes listed in figure 2.3? Intuitively, it is easy to conclude (but not very scientific) that as the experience level increases (at least up to a point), the probability that a pilot will have the attributes of the combat effective fighter pilot will also increase.

CHAPTER SUMMARY

As shown, the value of experience in combat is not easily determined. History says experienced fighter pilots have done better than inexperienced pilots in combat situations. Intuitive judgement says



AGGRESSIVE
- Be a Tiger
- Hard Nosed
- Pierce the Attack
- Maintain the Initiative
- Spirit to Take Them On
- Willingness to Fight
- Have the) Spirit of Attack
- Attitude of) Having the Enemy Cornered
- (Attitude of) Destroy, Not Survive

CONFIDENCE
- Self Confidence
- (To Be Successful)
- Confidence in Flight
- Can Do Anything

MAKE OPPORTUNITY HAPPEN
- Looked Hard for the Enemy
- Stayed Longer with Stragglers and Got More Kills
- When You Can Attack - Do It

FIGHT AGAINST ODDS
- Move Against Odds
- Continue Against (Adversity)
- Don't Consider (the) Odds
- Do - Even When Outnumbered

RISK TAKING
- Take All Risks
- (Must) Stick Out His Neck (At Least on Occasion)
- Be a Calculated Risk Taker
- Once Fight Starts - Do Full Blower
- (Must Have) Willingness to Take Chances
- Once Decided - Charge In
- Enjoy Personal Combat
- No Concern for Personal Safety

FLIGHT ABILITY
- Control of Aircraft
- Know Your Job
- Experience, Training, Practice

AERIAL GUNNERY
- Be a Damn Good Shot
- Close In Attack

BE PREPARED
- Knowledge of Your Aircraft
- Knowledge of Enemy
- Prepared for Fight
- (Be) Ready
- Think Where (Enemy) Will Be
- Look Around
- Never Concentrate Too Long

FAST REACTIONS
- Quick Reaction
- Split Second Decision

AWARENESS
- Of All Aircraft in the Battle

FAST ABILITY TO DECIDE AND ACT
- No Hesitation

STRESS
- Think Well Under Stress
- Concentrate Under Stress
- Hear and Think in Battle

CALMNESS
- Cool Head
- (Calm) Under Fire

LEADERSHIP
- Be a Leader
- Don't Lose Your Wingman
- Loyalty to Friends

PROFESSIONAL
- Keep a Sense of Humor Proportion)
- No Goodbyes - No Regrets

EXPLOIT
- Take Advantage of the Enemy's Mistakes
- Take Every Advantage
- Attack with Advantage
- Use Aircraft to Your Advantage
- Maneuver to Take Advantage
- Fire with Speed to Regain Altitude

DISCIPLINED
- Self Discipline
- Air Discipline
- Military Discipline

TEAM
- Synergism of Leader and Wingman Team
- Confidence and Trust in Team

MOTIVATION
- Drive
- Eager
- Humiliated in Air Once - Never Again
- Anger at Being Jumped - Killed All Four

DETERMINATION
- To Succeed
- (To) Work Harder Than Anybody
- See Your Job and Do It
- (To) Never Give Up

DEDICATED
- To Cause
- To Attack
- To Country
- To Purpose
- To Achieve Victory
- Patriotic
- Loyalty (To Country)
- Conscientious

DESIRE
- To Achieve
- To Attack
- To Win
- To Engage (The Enemy)
- To Do Everything to Win
- Have Purpose in Mind
- Do It Best
- Have Ambition

INSTINCT
- Of Hunter
- Of Killer
- Inborn
- For Combat

DELIBERATE
- About the Attack
- Calculating
- Positioning

UNAFRAID
- Not Be Afraid
- Afraid as Little as Possible
- Resolute

COURAGE
- Guts
- To Engage the Enemy
- Yet Have Common Sense
- Know When to Fight Another Day

CLOSE IN ATTACK
- No Deflection Shooting

GOOD HEALTH
- Stamina
- Physical Coordination

VISUAL ABILITY
- To Spot the Enemy
- Wide Field of View
- Good Peripheral Vision
- See Him Before He Sees You

ALERT
- Alert Thinker
- Quick and Smart
- Keen
- Good Thinking/Planning

Figure 2.3 Characteristics and Attributes of the Combat Effective Fighter Pilot

that the greater the experience level, the greater the chance a unit has for success. It has been shown that little is known about higher level pilot skills and that experience comes in different flavors in the USAF. Some pilots have continuous cockpit experience and some do not. Research is continuing, but meanwhile the situation continues to deteriorate. It will be shown in the next chapter that the number of experienced pilots in combat ready units is becoming critical. Modern fighters are only as effective as the pilots who fly them. The United States Air Force should reevaluate the need for experienced fighter pilots in the combat ready units. The price is high as will be explained in subsequent chapters, but the price of defeat in the next battle for the air may be even greater. At the end of WWI a doctrine was written, "....if you hold the air you cannot be beaten, if you lose the air you cannot win."[10]

CHAPTER TWO

End Notes

1. Claude C. Blanch, "Air Superiority Today and Tomorrow, "Air War College Professional Study Number 5847, Air University, Maxwell AFB, Alabama, April 1976, pp. 45-48.

2. W.A. Stuart, "Pilot Management Policy and Training Rates," A Report Prepared for USAF Project RAND, The Rand Corporation, Santa Monica, California, March 1971, p. 55.

3. Claude C. Blanch, "Air Superiority Today and Tomorrow," Air War College Professional Study Number 5847, Air University, Maxwell AFB, Alabama, April 1976, p. 4.

4. Ibid., p. 43.

5. General Lew Allen, Chief of Staff, USAF, Air Force Policy Letter for Commanders, Department of the Air Force, Washington, D.C., 1 October 1979, p. 4.

6. Wallace W. Prophet, Long-term Retention of Flying Skills: A Review of the Literature, Human Resources Research Organization, Alexandria, Virginia, October 1976, p. 14.

7. Ibid., p. 76.

8. Edward W. Youngling, et al., Feasibility Study to Predict Combat Effectiveness for Selected Military Roles: Fighter Pilot Effectiveness, McDonnell Douglas Astronautics Company - East, Saint Louis, Missouri, 29 April 1977, p. 1-1.

9. Ibid., p. 3-91.

10. Claude C. Blanch, "Air Superiority Today and Tomorrow," Air War College Professional Study Number 5847, Air University, Maxwell AFB, Alabama, April 1976, p. 6.

CHAPTER THREE

GRAVITY OF THE SITUATION

The title of this chapter was going to be "Severity of the Situation," but after examining the latest data from the Air Force Manpower and Personnel Center, the title was changed. The situation with respect to fighter aircrew experience in the combat ready units is indeed grave. Experience among fighter pilots has reached an all time low, and there is not a rapid solution to the problem. This chapter will quantify current experience levels, and address the distribution of experience as it applies to the USAF Active Duty Fighter Force. It will answer the question of how serious is the lack of fighter experience, and will identify the location of this experience in the Air Force.

USAF DEFINITION OF AN EXPERIENCED FIGHTER PILOT

Before addressing the current experience levels, one should know the official Air Force definition of an "experienced fighter pilot." To be an experienced fighter pilot in the Tactical Air Forces (TAF) a pilot must have: (1) 500 hours in the primary assigned aircraft, or (2) 300 hours in the primary assigned aircraft and

1000 hours of instructor pilot or first pilot time in some other aircraft, or (3) have 100 hours in the primary assigned aircraft if he has 500 hours in any fighter.[1] Note - This criteria was adjusted downward in the mid 1970s due to declining experience levels in the TAF. Previously it required 800 hours vice 500 hours in the primary assigned aircraft if the pilot had no previous experience. The above criteria is rather arbitrary and can be changed at any time, should commanders decide to change it. The Air Force Manpower and Personnel Center (AFMPC) uses this experience definition to track pilot experience in all fighter units.

AFMPC EXPERIENCE DATA

As of September 30, 1979, AFMPC reported that the distribution of experienced fighter pilots in cockpit jobs is as follows:[2]

Weapon System	No. of Exp. Pilots	% of total Pilots Asgnd.
F-4	723	58%
F-14	259	60%
A-7	55	49%
A-10	121	50%
F-111	231	72%
	1389	57.8% (Average)

Experience levels in the combat ready or operational units were less than the percentages shown for the

total weapon system since the training wings (TFTSs and RTUs) are manned with only experienced pilots to serve as instructors. For example, the combat ready operational units in the F-4 had only 44 percent experienced pilots as of September 30, 1979, vice the 58 percent figure shown above.[3]

STUDY OF EXPERIENCE BY FLYING HOUR CATEGORY IN TAC

Commanders were concerned over this lack of experience problem; therefore an in-depth experience analysis was done on all the operational fighter squadrons belonging to Tactical Air Command, and was presented to the October 12, 1979, TAC Commanders Conference. The study was conducted by the TAC staff and is summarized on the next page in figure 3.1.[4]

The data in figure 3.1 demonstrates the gravity of the situation. The Air Force personnel system leads one to believe that almost 58 percent of all fighter pilots are experienced, yet when one examines the combat ready, front line units, he sees that only 40.9 percent of the pilots have more than 500 hours of fighter time. Worse yet is the fact that only about one out of five pilots have more than 1000 hours in a fighter. When these times are compared with the statistics presented in Chapter Two, one must question the viability of the fighter force in combat. Referring back to the 1971 RAND study that says it

Wpn. Sys.	Total No. of pilots	Number / Percent of Pilots over				No./% FAIPS*
		500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	
F-4	309	103/33.3%	39/12.6%	20/ 6.5%	11/ 3.6%	43/13.9%
F-15	236	115/48.7%	68/28.8%	49/20.8%	26/11.0%	54/22.9%
A-7	110	42/38.2%	16/14.5%	7/ 6.4%	6/ 5.5%	22/20.0%
A-10	97	43/44.3%	19/19.6%	8/ 8.2%	5/ 5.2%	6/ 6.2%
F-111	63	30/47.6%	15/23.8%	10/15.9%	8/12.7%	16/25.4%
Totals/ Averages	815	333/40.9%	157/19.3%	94/11.5%	56/ 6.9%	141/17.3%

* FAIPS - First Assigned Instructor Pilots -- first assignment after pilot training was as an instructor pilot in Air Training Command. These pilots are experienced aviators, but are serving their first tour of duty in an operational weapon system.

Figure 3.1 Fighter Experience by Flying Hour Category in Combat Ready Units - Tactical Air Command (October 1979)

takes at least five years to become proficient at flying a fighter, and remembering that the average fighter pilot will get 1000-1500 hours of flying time in five years, one can conclude that only 12-20 percent of the pilots in combat ready units are proficient at flying their aircraft. Current tactics dictate that many flights will be no more than two aircraft, which means that in combat many flights will be led by pilots that are not proficient at operating their machines. These are likely to be the same flights that won't accomplish their mission and/or will be destroyed by the enemy.

Remember from Chapter Two, that the 38 Korean War Aces averaged about 2000 hours of fighter time as did many of the MIG killers in Vietnam, yet, figure 3.1 shows that only 6.9 percent of the pilots studied had over 2000 hours of fighter time. Many of these 2000 hour pilots were either the squadron commander or operations officer and likely have just returned to the cockpit after some three or four years in a staff job. The question is who is going to do all the MIG killing in the next conflict? There are many experienced pilots in training wings and staff positions, but in a short notice, short duration war, these pilots will never see action due to lengthy mobilization times.

Some commanders say better training, such as Red Flag exercises at Nellis AFB, Dissimilar Air Combat

Training, and improved flight simulators, will make up for this lack of experience. Training methods have definitely improved since the Korean conflict, but many pilots feel that training has been seriously degraded by other factors.[5] For example, Air Traffic Control restrictions all over the world have reduced effective sortie training times. These restrictions may offset the better training methods. The point is, arguments about training effectiveness can be made on both sides, but combat will be the only valid test of pilot effectiveness. It remains the opinion of this author that the experience situation is indeed grave. There is an experience crisis in the U.S. fighter force.

WHERE IS THE EXPERIENCE?

Where are all the experienced fighter pilots if they aren't in the combat ready units? The air reserves and air national guard units have a great deal of experience, but they can't be counted on for the short notice, short duration war. The instructor pilots in the training wings are highly experienced, but they can't be counted on either for reasons explained below.

Warning times being used by NATO planning staffs are much less than the time required to get an instructor pilot from a training wing into the war.[6] This training

wing instructor pilot has been spending much of his time teaching basic flying techniques and has not been practicing the latest tactics. He has primarily been watching the student pilot fly the aircraft, and is not proficient at executing the kinds of maneuvers he will be required to perform if he is to survive in combat. He can be trained to an excellent state of readiness in a relatively short period of time because he is experienced, but the time required still exceeds what most planners feel is a reasonable warning time. Therefore, the instructor pilot in the training wing will not see action in the short notice, short duration war.

In FY 79, the total tactical fighter pilot requirement was 7860 pilots.[7] Of that 7860, only 1810 pilots were required in cockpit jobs in combat ready units. (See figure 3.2) Where then are the other 6050 fighter pilots? The training pipeline/ transient account was 760 pilots. The remaining 5290 requirements were all for experienced pilots to fill overhead positions such as squadron commander, operations officer, staff officers at various levels, instructor pilots, forward air controllers, etc. It is interesting to note, also, that only 39 percent of the line unit requirements are for experienced pilots, or in other words 706 (.39 X 1810) cockpits. This 39 percent figure

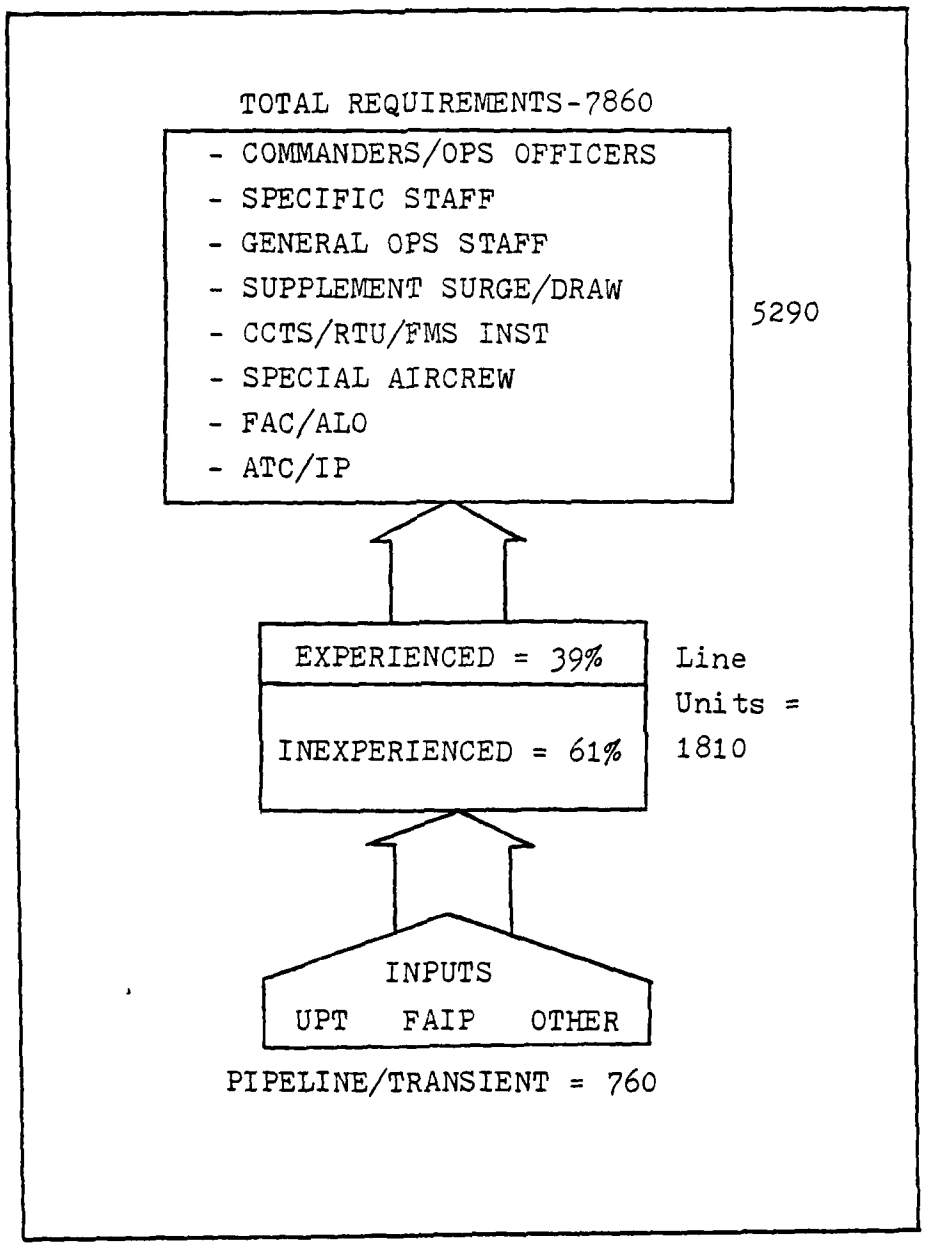


Figure 3.2

FY 79 Tactical Fighter
Pilot Requirements

is an agreed upon minimum number of experienced pilots to provide a safe level of supervision in the line units. It is striking that there are over 5,000 jobs outside combat ready units that all require experienced fighter pilots, when there are only 706 hard requirements for experienced pilots in the combat ready units. The question one must ask is where are the priorities? Why do only 40.9 percent of TAC's combat ready pilots have over 500 hours of fighter experience when there are over 5,000 other highly experienced fighter pilots floating around the Air Force?

CHAPTER SUMMARY

The numbers indicate there is a critical lack of experience in the U.S. fighter force. The data presented in this chapter, historical comparisons, and the RAND study (these last two were discussed in Chapter Two), together indicate the combat ready USAF fighter force may not be as good as conjectured; consequently, there is cause for alarm. The next chapter will pose some constraints on fighter force management so that solutions to the problem as stated in Chapter One can be discussed in terms of those constraints in Chapter Five.

CHAPTER THREE

End Notes

1. Unstructured telephonic interview with Captain Jerry Thorius, Fighter Resource Manager, Air Force Manpower and Personnel Center, Randolph AFB, Texas, October 1979. (Autovon 487-6513)

2. Ibid.

3. Ibid.

4. Major Robert Jones, Personnel Staff Officer, Headquarters, Tactical Air Command, Langley AFB, Virginia, Staff study prepared for 12 October 1979 TAC Commanders Conference. (Autovon 432-4682)

5. Group discussion with 15 field grade officers, all experienced fighter pilots/Weapon System Operators representing experience from the F-15, F-4, F-111 weapon systems.

6. Actual numbers being used are classified and will not be presented.

7. Major Charles Heltsley, Personnel Staff Officer, Air Force Manpower and Personnel Center, Randolph AFB, Texas, Rated Force Management Briefing, October 1979, Slide 5. (Autovon 487-3356)

CHAPTER FOUR

CONSTRAINTS ON FIGHTER FORCE MANAGEMENT

This investigation has revealed that aircrew experience levels are low in USAF combat ready fighter units because of current force management policies. This chapter will address those policies and will discuss some constraints on fighter force management. In order to provide a common background of knowledge, the chapter will begin by tracing the normal assignment sequence of a fighter pilot from the day he enters the Air Force until he becomes an upper level manager/leader. It will then continue with a force management constraints discussion in an effort to reveal the rationale behind current policies and procedures. If one understands the rationale behind force management, he can then pose changes to solve the problem as stated in Chapter One. i.e. How can the USAF simultaneously maximize aircrew experience in combat ready fighter units, provide sufficient fighter expertise on the staff, and sustain viable aircrew replacement training programs?

A TYPICAL ASSIGNMENT SEQUENCE

Most candidates enter Undergraduate Pilot Training the same day they come on active duty. As

second lieutenants, pilot candidates receive training in the T-41, T-37, and T-38 aircraft. This program takes approximately one year and pilot wings are awarded upon successful completion.

Subsequent assignments are made by a people-machine-interface selection process. If a pilot is chosen to go to fighters, he is then sent to the Fighter Lead-in Training program at Holloman AFB, New Mexico. Here he receives 8-10 weeks of advanced training in the T-38 aircraft. The instructors in this program normally have previous fighter experience and teach basic tactical fighter skills and maneuvers.

The young fighter pilot then goes to a Combat Crew Training School (CCTS) and learns to fly his assigned weapon system. Most of these flying schools are conducted by active duty fighter wings scattered throughout the United States. The CCTS training averages 80-100 hours of flying time and takes 5-6 months. Upon graduation, the pilot is supposed to be mission ready. Usually, however, his gaining combat ready unit elects to give him some additional training and an evaluation flight prior to declaring him combat ready.

The average pilot then stays in a combat ready unit for 1-3 years before he is moved. He then will likely be assigned as a forward air controller, instructor pilot in Undergraduate Pilot Training, or perhaps

as a CCTS instructor in a fighter aircraft. A few may be reassigned to another operational fighter unit. By this time many have fulfilled their commitments and elect to leave the Air Force.[1] Those who do not separate, now have 6-8 years of service and will again be reassigned to any of the requirements mentioned above. If they haven't been instructors in a formal training course by this time, they will most certainly become one. Requirements dictate that these experienced fighter pilots will be filling one of those 5000+ overhead requirements mentioned in Chapter Three. A few may escape, but not many.

By the time a fighter pilot reaches 9-10 years of service, he will be looking for a staff job if he has aspirations of attaining top leadership positions. There will be several of these senior "captain-level" positions available; thus, many experienced pilots will be assigned to various level staff positions. At this point, many of these officers will be promoted to major and some will be selected to attend intermediate service school. Upon completion of their staff job or service school, they will return to the cockpit for another 3-5 years of flying. If they remained in the cockpit until they were promoted to major, they will likely be assigned to a staff position upon completion of intermediate service school. (if they were selected to attend)

At about the 16-18 year point in a fighter pilot's career, he is normally looking to be an operations officer, or commander of a fighter squadron. Often, he is assigned to one of these jobs upon completion of a staff tour, or some other nonflying job. He remains in this job for 2-3 years prior to either promotion, retirement, return to a staff position, or he may be selected to attend a senior service school.

CONSTRAINTS ON FIGHTER AIRCREW MANAGEMENT

Money is the greatest constraint on fighter force management. In 1978, it cost $560,000 to transform a graduate of pilot training into a qualified F-4 pilot. The cost for the F-15 was $1,020,000.[2] In 1980, it is even higher. Training fighter pilots is an expensive proposition! One must cut corners wherever possible.

Undergraduate Pilot Training is a compromise program. Discussions about going to a "Dual-track" program have been going on in the Air Force for several years now, but the answer has always been the same.... it costs more.[3] Consequently, the quality of the product is not as good.

The fighter lead-in training program at Holloman AFB was implemented in order to save fuel and money. The training there is conducted in the T-38 aircraft which is much cheaper to operate than fighter

aircraft. Consequently, a pilot receives fewer flights in his primary assigned weapon system during CCTS. Again this is viewed among most pilots as a compromise program. This is not to say that it is bad to save money. It's not! The purpose is to illustrate that money has dictated training methods. The final product, may in fact, be a better trained pilot per dollar spent. Fighter Lead-in Training, however, requires experienced fighter pilots to be instructors and these pilots will not be available to fight the short notice, short duration war. The question is, can the United States Air Force still afford to have these instructor pilots (IPs) non-combat ready? Can a way be found to have these pilots available to fight the short notice, short duration war?

Money dictates how much flying time is available. The amount of available flying time dictates how much each pilot can fly, which in turn dictates how rapidly he becomes an experienced resource. It limits the number of pilots per aircraft (crew ratio). Flying is not like driving an automobile; one must practice flying a certain amount or he will not be able to perform his mission safely or effectively. Thus if flying time is cut, either the crew ratio must be reduced or each pilot flies fewer hours per month...which obviously affects readiness. It should be noted here, however, that Tactical Air Command flew more hours in fighters

in FY 79 than in FY 78; so there is not necessarily a downward trend in flying hours as one might suspect.[4] However, some drastic cuts were made after the 1973 oil embargo, and most pilots feel more flying time is needed to improve force readiness.

Another major constraint on fighter aircrew management has been absorption capability. As stated earlier, thirty nine percent of the pilots in every squadron are required to be experienced pilots (by the official USAF definition of experience). This means that no more than sixty one percent of the cockpits are available at any one time to absorb new pilots out of pilot training. The problems in the last few years have been low retention rates and an increased need for pilots to fly an increased number of aircraft.[5] This has placed a tremendous training burden on the fighter force. There are not enough available cockpits to train new pilots to replace the losses or meet the increased demand for pilots. Thus, the experience level has declined to the point that it is very near the thirty nine percent (minimum) level, and there still aren't enough available cockpits for the inexperienced pilot. Note - The thirty nine percent figure is considered to be an <u>absolute</u> minimum, to insure a safe level of supervision.

As soon as a pilot is finally "experienced," he must be moved out of the squadron to make room for

another inexperienced pilot. In the past, these pilots have been filling forward air controller (FAC) positions, Undergraduate Pilot Training instructor jobs, etc. This means they will have to be retrained into their primary aircraft when they return to the fighter business, which in turn creates more of a burden on the training system. Suffice it to say that growth capability has been limited due to the lack of absorption capability. The only permanent solution to this dilemma appears to be to change force management policies.

Understand that combat sortie generation rates dictate crew ratio requirements, which is another force management constraint. It has been determined that approximately 1.25 pilots will be required per aircraft in wartime. This allows for adequate crewrest, planning time, briefing time, etc. This is a constraint since, if fewer pilots were required, then each pilot could fly more, and would become experienced sooner.

The policy that all pilots will attend a CCTS prior to reporting to their operational unit is another constraint on the system. The fact that this training is conducted at a central location away from an operational unit means experienced pilots are required to be IPs and are not able to practice current tactics with an operational unit. As stated earlier, this will preclude them from fighting the short notice, short duration war.

The policy that every graduate of CCTS must be nearly combat ready is another constraint. It means the course must be longer; thus more IPs are required for a given number of students.

Certainly, there are other constraints which affect fighter pilot resource management, but the major ones have been addressed. The next chapter will discuss ways to relax some of the above constraints in order to solve "the experience crisis." It will be shown that the Air Force is perhaps its own worst enemy. Rules have been established over the years that are having a strangling effect on fighter force management. Priorities must change! First priority must be winning the "come as you are" war. It's the "worst-case" threat.

CHAPTER FOUR

End Notes

1. Data from the Rated Retention Office at the Air Force Manpower and Personnel Center, Randolph AFB, Texas, indicates that most pilots leave the Air Force between their sixth year of service and their eleventh year of service. Source: Major Charles Heltsley, USAF, Rated Retention Office, Air Force Manpower and Personnel Center, Randolph AFB, Texas, (unstructured telephone interview), October 1979. (Autovon 487-3356)

2. "The Cost of Producing Pilots," Air Force Magazine, October 1978, p. 72.

3. A "Dual-track" program would separate pilots into two groups at the half-way point in Undergraduate Pilot Training. One group would be given specialized training to prepare them to fly fighter aircraft, while the other group would be given training to prepare them to fly multi-engine cargo/bomber aircraft.

4. General Wilbur Creech, Commander, Tactical Air Command, Langley AFB, Virginia. (Informal comments made at a luncheon at Fort Leavenworth, Kansas), November 1979.

5. Major Charles Heltsley, USAF, Rated Retention Office, Air Force Manpower and Personnel Center, Randolph AFB, Texas, (Rated Force Management Briefing), October 1979. (Autovon 487-3356)

CHAPTER FIVE

SOLUTIONS TO THE PROBLEM

This chapter poses several possible solutions to counter the current lack of fighter flying experience. The suggestions will be presented separately, but in fact, a combination of the suggested changes will likely be required to maximize aircrew experience in combat ready fighter units, simultaneously provide sufficient tactical expertise on the staff, and sustain viable aircrew replacement training programs.

At times, there is little difference between innovative thinking and "wild ideas." Hopefully, the reader will continue with an open mind and envision the following proposals as a way to increase combat capability using existing resources. Some of these ideas may seem radical at first glance; but if force managers move at the right pace, they should, (1) find these changes desirable and (2) be able to accommodate them in the interest of improving fighter unit readiness.

USING RESERVE FORCES TO CONDUCT CCTS

This solution entails changing mission assignments for both Air Force Reserve (AFR)/Air National Guard (ANG) fighter units and active force fighter units.

Where possible, AFR/ANG units could assume the aircrew replacement training mission by running the Combat Crew Training Schools (CCTSs) for both reserve and active duty fighter aircrews. The active duty fighter units now running these schools, would then be free to assume operational mission assignments.

Lt. Col. Richard E. Cotten, Lt. Col. Tilford E. Tucker, United States Air Force Reserve, and Lt. Col. Paul L. Simpson, USAF, state in an Air War College Research Report that the CCTS mission is a very attractive way to involve Air Reserve Forces in the flying training mission.[1] They go on to state that significant cost savings would be afforded if the AFR/ANG conducted the training mission.[2] When their paper was written (1975), the Air National Guard was operating the F-100 and F-105 CCTSs, and the Air Force Reserve was operating the A-37 and C-130A CCTSs;[3] so it seems feasible that the AFR/ANG could run the CCTSs for active duty aircrews as well. They are currently doing just that in Tucson, Arizona, for the A-7 weapon system.

The AFR/ANG will soon be flying three of the five major fighter weapon systems in the active inventory. They have the F-4 and are programmed to get A-10s and F-16s in the near future. As these new A-10 and F-16 units form, they could be equipped and trained for the CCTS mission. AFR/ANG F-4 units could be converted

very easily to the training mission since most units have a wealth of aircrew experience (fighter pilots and WSOs that have left active duty in recent years). It might be advisable to give AFR/ANG units some F-15s and F-111s so they could also run the CCTSs for those weapon systems.

There are several advantages to having the Air Reserve Forces run the CCTSs. Probably the greatest advantage is that it frees active duty aircraft and experienced aircrews for combat ready status. AFR/ANG units have operational commitments now, but are normally programmed as follow-on units in wartime due to lengthy mobilization times. With the active duty units committed to operational (combat ready) status, mobilization time would be less, and these units would be available to fight the short notice, short duration war. The Air Reserve Forces could stay on their civilian jobs at home and train replacement aircrews in their spare time. Thus, training would not be interrupted and replacement aircrews would continue to flow into the war if it turns out to be of long duration.

Another advantage of assigning the training mission to AFR/ANG units is that they would not have to take time from their civilian jobs to cover their operational commitments and to go to exercises during

peacetime. Active duty units would be available to go on temporary duty (TDY) as required to participate in these exercises.

This program would help fighter aircrew retention for the active duty forces. The operational flying mission is more challenging and interesting for experienced aircrews than the training mission. Greater job satisfaction among active duty aircrews should help retention. The AFR/ANG fighter units, on the other hand, usually have long waiting lists of pilots trying to get in...even those units currently performing the training mission. Therefore, it is not anticipated that finding experienced aircrews for AFR/ANG units will be a problem just because they have the mission of running a CCTS. This is an area, however, that should be staffed thoroughly prior to implementing such a change.

One disadvantage of implementing this change is simulator availability. The CCTS mission requires one or two simulators to be located at the installation where the training is being held. Most AFR/ANG units do not have simulators. A cost would be incurred to either move simulators and/or buy additional simulators.

Another disadvantage is that most AFR/ANG fighter units are only squadron-size units. The current CCTS concept centralizes academic instruction at the wing level to conserve instructor manpower.

Training locations would be scattered all over the United States, which could make command and control of the program more difficult. Air-to-air/gunnery range proximity and availability will have to be staffed carefully prior to program implementation.

This author maintains, however, that the benefits of such a program, outweigh the costs. It offers a solution to the lack of experience problem and will allow for growth in the fighter force by making more cockpits available in the active duty force for inexperienced pilots (increased absorption rate). It gives the Air Reserve Forces an extremely important mission and one they can "sink their teeth into." It would help the reserves shake off the "weekend warrior" syndrome and for the first time make them a real part of the total force. Sure, there will be some growing pains, but combat capability for the short notice, short duration war would be enhanced greatly.

It should be noted here that this program is currently under study at Headquarters Air Force level. The status could not be determined.

DECENTRALIZED AIRCREW TRAINING

Fighter aircrew training is very centralized in the USAF. As explained in Chapter Four, CCTS is currently conducted at a central location and produces

what is supposed to be a combat ready product. Consequently, many IPs are required to serve in units that are not training in the latest tactics on a daily basis. The solution that is being offered here, would entail decentralizing aircrew training and put the latter stages of it under the management of combat ready wings.

What is envisioned is merely a conversion course for each weapon system with the remainder of the aircrew's training being conducted at his operational unit of assignment. The new pilot would receive all academic instruction and simulator training in this conversion course, but only a basic check out in the aircraft. He would then proceed to his base of assignment and report to the wing. The wing would manage a training program for incoming aircrews and conduct syllabus training until the aircrew was in fact combat ready. He would then be assigned by the wing to his operational squadron.

It takes a certain number of sorties to train the average pilot to a point where he is proficient enough to fly combat missions. This program would not change the number of sorties required; it would merely put the management of the latter stages of training under an operational wing rather than a training wing. Since the new conversion course would

be much shorter than the current CCTS, fewer aircraft and instructors would be required to run the new course. Therefore, fewer units would be required to conduct this formal training. In other words, some of the training wings in the Air Force today, could become operational units. Of course, these wings would have to pick up some of the operational commitments of the other wings since these wings would now have to fly training sorties for conversion course graduates to get them combat ready. The total number of aircraft required for training aircrews would remain the same as it is today.

Perhaps, AFR/ANG units could be assigned the mission of running the conversion course. This would combine the first solution offered in this paper with the decentralized aircrew training concept. The same benefits would be realized as discussed earlier.

Like other options, there are both advantages and disadvantages to decentralizing aircrew training. One advantage is that several instructors now required in the CCTSs could be redistributed to the operational fighter wings throughout the Air Force. This would increase the aircrew experience at each operational wing; now, when the wing is called to deploy to the short notice, short duration war, these highly experienced aircrews will be available and ready to deploy.

Each operational wing could manage its experienced aircrews however it desired. Likely they would rotate the instructors between the operational squadrons and the training unit, which under this program, would be required in every operational wing. This would provide instructors who are proficient at the latest tactics. Periodically (about every two or three months) these instructors would rotate with another group of instructors and return to an operational squadron. Over a period of every one or two years, all of these experienced aircrews would likely get a chance to fly Red Flag missions and/or participate in other exercises. Currently, CCTS instructors rarely have such opportunities.[4] Better-trained instructors produce better-trained students.

Combat ready fighter wings constantly complain about the quality of the CCTS graduate. They understand that the number of training sorties in the CCTS syllabus have been reduced to a bare minimum, but they don't like the product they are getting. Training wings are constantly pressured to graduate classes on time; therefore, the training student aircrews receive in CCTS, is not always quality training. There is a tendency for training units to graduate students on time, rather than give them additional sorties even if they may need them. The decentralized training program,

as suggested here, would leave the decision as to whether or not the new aircrew member needs additional training up to the consumer of the product, i.e. the operational wing. In other words, the operational wings would now have control over the quality of the aircrew going into its own operational squadrons.

Again, job satisfaction would be greater for experienced aircrews if they could cycle back and forth between the training mission and the operational flying mission. Greater job satisfaction among experienced aircrews, means better retention rates. Better retention rates mean a reduced training burden on the fighter force.

The decentralized aircrew training program has some disadvantages. It would be difficult to train new aircrews in poor European weather conditions. European-bound aircrews may have to be given a full CCTS prior to reporting to the theater. This area would require thorough staffing. Airspace and range availability could possibly be another limitation. This area would also require further investigation and research prior to program implementation.

Controls would have to be placed on the program to keep new aircrews in operational wings from getting all the sorties at the expense of continuation training for the operational squadrons or vice versa. The quality and difficulty of the training for new aircrews

would have to be monitored closely by higher headquarters through the inspector general (IG) system. There is likely to be other "growing pains" with this proposal until aircrews adjust to the change. There may be other advantages that cannot be foreseen at this point. For example, it is likely that fewer family moves would be required since a conversion course would be a short TDY for the officer and a CCTS course dictates a family move.

A decentralized aircrew training program has merit, at least on paper. Operational problems may prove to be cumbersome in reality, but the fact remains...it would keep more experienced aircrews ready and available to fight the short notice, short duration war. This author recommends further staffing and a trial of the concept.

MODIFICATION OF FIGHTER LEAD-IN TRAINING

As stated in Chapter Four, Fighter Lead-In Training (FLIT) at Holloman AFB, New Mexico, requires many experienced pilots as instructors. This program could either be given to the Air Reserve Forces to run, or could be collocated with the conversion course for each of the five major fighter weapon systems. If this option were chosen, IPs could be dual-qualified in both the T-38 aircraft and their primary fighter.[5] Student aircrews could then be sent to one location

for both FLIT and the conversion course and remain under the supervision of the same squadron and instructors.

This modification would mean that the experienced fighter pilots that are now required in the FLIT program would be current in a primary weapon system. Therefore, they could be made available to fly combat several weeks sooner than under the present program, should their services be required. Again, this management change would provide added combat capability for the short notice, short duration war.

DECENTRALIZING STAFF FUNCTIONS

As shown in Chapter Three, figure 3.2, the staff is a consumer of many experienced fighter pilots. A certain amount of rated presence on the staff is essential to proper management of the Air Force. A recent decision was made by USAF upper level management to only fill 70 percent of the fighter pilot staff positions due to a shortage of fighter pilots Air Force wide. Thus, staff requirements have been reduced temporarily, which will help the lack of experience problem as presented earlier, but the rated presence on the staff has also been reduced to a bare minimum.[6]

An alternative approach would be to decentralize some of the staff functions requiring rated/fighter

expertise. The staff officer could then be assigned to a special staff section collocated with a fighter wing. He would spend about two-thirds of his time performing staff duties and about one-third of his time flying as a part-time aircrew member.

This program would allow for greater surge capability in wartime. In event the short notice, short duration war becomes a reality, these part-time aircrew members could drop their staff work and deploy immediately with their operational squadrons. They might also be used as instructor pilots in the conversion course.

Perhaps this sounds like a "wild idea" rather than innovative thinking. However, Tactical Air Command (TAC) is doing just what is suggested above with its instructional systems development (ISD) teams. These teams are doing staff work (writing training syllabuses) at various TAC bases, yet the officers fly as instructors in training squadrons (TFTSs or RTUs). They are directly under TAC headquarters, but fly as attached aircrew members. The arrangement works quite well.[7]

Of course, some types of staff work lends itself to decentralization more readily than others, but with the capabilities of modern communications equipment, (speaker telephones, computers, closed circuit television, etc.) most any kind of staff work

could be done at satellite locations. From a decision maker's point of view, it would not be as convenient as having a staff at the same location. However, an improved combat posture might be worth some inconvenience. Certainly there would be "growing pains," but again it can be asked...where are the priorities?

Decentralizing staff work may mean that the total number of pilots in the Air Force could be reduced slightly. Remember from Chapter Four that combat sortie requirements dictate crew ratio requirements. Many staff officers would now be combat ready in a fighter, and thus, be able to provide surge capability for the first few days of the war. Due to battle damaged aircraft, the sortie generation capability is likely to fall after the first few days of the war and suddenly, the Air Force is in a pilot rich environment. If the war turns out to be longer than anticipated, the staff officers can then return to their jobs at home and assist efforts to win it.

A fighter pilot in a staff job is like money in a certificate of deposit (CD). He's money in the bank; and by doing staff work, he is producing a good rate of return on the investment. The problem is, "the money" can't be withdrawn from the bank whenever it is needed. The main point of this paper is that the Air Force is going to need that money to fight the

short notice, short duration war. Perhaps it would be better advised to put "the money" in a passbook or combination account where it would draw a good rate of return (officer is still performing staff duties) and be available when needed. Resources that are not available at critical times are essentially worthless.

This "decentralized staff" program is definitely a compromise. There is no doubt that having full time fighter expertise on the staff is better, and in the past the USAF was able to afford it. In light of future threats, austere budgets, and energy shortages, the time has come to change. Recommend further study of this proposal.

CHAPTER SUMMARY

There are perhaps other solutions that would reduce the overhead requirements for experienced fighter pilots. For example, maybe FAC requirements could be reduced. The point is, new ways must be found to solve the "experience crisis" in the fighter force. The suggestions made in this chapter appear to be worthy of further study by staff personnel. Change must evolve in an organization as large as the U.S. Air Force, but now is the time to start the process. Priorities need to be changed and goals should be established to bring about that change. The U.S. fighter aircrew is still better trained and more capable than his adversary today, but such may not be the case tomorrow.[8]

CHAPTER FIVE

End Notes

1. Richard E. Cotton, Lt Col, USAFR, Paul L. Simpson, Lt Col, USAF, and Tilford E. Tucker, Lt Col, USAFR, "Air Reserve Forces Participation in Air Force Flying Missions," Air War College Research Report Summary No. 5787, Air University, Maxwell AFB, Alabama, April 1975, p. 84.

2. Ibid., p. 84.

3. Ibid., p. 83.

4. The 56 TFW, MacDill AFB, Florida, and the 31 TFW, Homestead AFB, Florida, both sent a small group of instructors to Red Flag in 1979. Author spent a total of four years instructing in the F-4 and A-7 CCTSs and never had the opportunity to participate in an exercise. Discussions with other former instructors verifies this to be the norm rather than the exception.

5. Air Force Systems Command and Air Defense Command have permitted dual qualification for several years.

6. Based on a telephone interview with Major Ron Carp, Chief, Joint Departmental Manning Office, Air Force Manpower and Personnel Center, Randolph AFB, Texas, 20 February 1980.

7. Based on telephone interview with Major Tom Reynolds, USAF, F-16 ISD team, Hill AFB, Utah, 22 February 1980.

8. Statement made based on a classified research project conducted by the author at the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas, February 1980.

CHAPTER SIX

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

If the United States Air Force is to remain a viable airpower, it must be capable of change. It must change to meet the threat. The 1973 Middle East War was a brief glance at the lethality of modern warfare. Conflict with the Soviets or any armed force equipped with Soviet equipment is going to be intense. Warning times are likely to be short. The best men and equipment the United States can muster will be required to meet future challenges.

General James A. Hill, Air Force Vice Chief of Staff, does an excellent job of summing up where the Air Force is today. He said,

> "..., over the past 10 years, the Air Force uniformed force has been reduced some 30 percent. Over this same period, the demands for combat readiness have steadily increased in the face of unrelenting growth in Soviet military capability. Consequently, this wealthy and populous nation, with a gross national product measured in trillions of dollars, confronts the most powerful potential adversary in history with the smallest Air Force it has fielded since 1950.
>
> This trend toward fewer people has been partially offset by technological advances which have vastly improved the capability of both combat and support systems. However, this new sophistication exacts a steep price in terms of complexity and the skill required to operate and maintain high-technology equipment."[1]

The last sentence in General Hill's remarks is a key point in this theses; i.e. it takes skill to operate high-technology equipment. The modern fighter aircraft is some of the highest-technology equipment on the battlefield. Yet, little emphasis is placed on having the most skillful pilots in the units that will fight the short notice, short duration war. In view of the threat and the challenges of operating complex equipment, fighter manning priorities are misplaced. Fighter pilot skill is being wasted.

This thesis has suggested several management actions that could be taken to enhance the experience levels in front line fighter units. These include, (1) using reserve forces to conduct CCTS, (2) decentralizing aircrew training, (3) modifying the Fighter Lead-in Training (FLIT) program, and (4) decentralizing staff functions. All are major changes in fighter force management, but all appear to be feasible and compliment one another. The advantages these recommended programs would produce in terms of increased experience levels where it counts, better use of the Air Reserve Forces, and greater aircrew stability, appear to outweigh the disadvantages.

Key to making a decision to change fighter force management, is the issue of the value of the experienced fighter pilot in combat. Can the USAF win

the next air battle without him? Data presented in Chapter Two suggests not. It's the "higher level" pilot skills that separate the winners from the losers, yet little is known about these skills.[2] The USAF is just now getting a grasp (through research contracts) on the basic pilot skills required to fly modern military aircraft. The frontier of knowledge lies somewhere between understanding the basic pilot skills and understanding the "higher level" skills, which equate to combat effectiveness for the fighter pilot. One can only conclude intuitively that the more experience a pilot has, the greater the chance he possesses "higher level" skills, and therefore is more likely to be successful in combat.

RECOMMENDATIONS

The threat of a "come as you are" war and the lack of flying experience in front line fighter units implore the need for change in fighter force management. Recommend staff action be initiated to fully investigate the feasibility and desirability of implementing the proposed changes as described in Chapter Five.

SUGGESTION FOR FURTHER RESEARCH

Recommend inflight evaluations be conducted on instrumented weapons ranges to quantify the value of the experienced fighter pilot. Such a test would,

for the first time, objectively evaluate the difference in performance between experienced and inexperienced pilots.

CHAPTER SIX

End Notes

1. Remarks by General James A. Hill at an Air Force Association National Convention in Washington as quoted in Air Force Policy Letter for Commanders, Washington, D.C., October 1979, p. 4.

2. Wallace W. Prophet, Long-term Retention of Flying Skills: A Review of the Literature, Human Resources Research Organization, Alexandria, Virginia, October 1976, p. 79.

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